

Air entraining admixture



CE Approved – Certificate No. 0086-CPD-469071
EN934 part 2 table 5

Description of Product

MICRO-AIR[®] 103 is an air-entraining admixture which gives concrete extra protection by creating **ultra-stable** air bubbles that are strong, small and closely spaced - a characteristic especially useful in the types of concrete known for their difficulty to entrain and maintain the air content desired. Even when used at a lower dosage rate than standard air-entraining admixtures,

MICRO-AIR[®] 103 complies with:

- EN934 part 2 table 5
- ASTM C-260,
- Water Regulations Advisory Service (WRSR) approval listing 0301527

Fields of Application

- Concrete exposed to freeze/thaw attack
- To reduce bleeding due to poor aggregate grading

Features and Benefits

The entrainment of optimum air content in concrete results in the following improvements in concrete quality:

- Increased resistance to damage from freeze/thaw cycles and to scaling from de-icing salts.
- Reduced permeability - increased water-tightness.
- Reduced segregation and bleeding.
- Improved plasticity and workability.
- Greatly improved stability of air entrainment.
- Improved air-void system in hardened concrete.

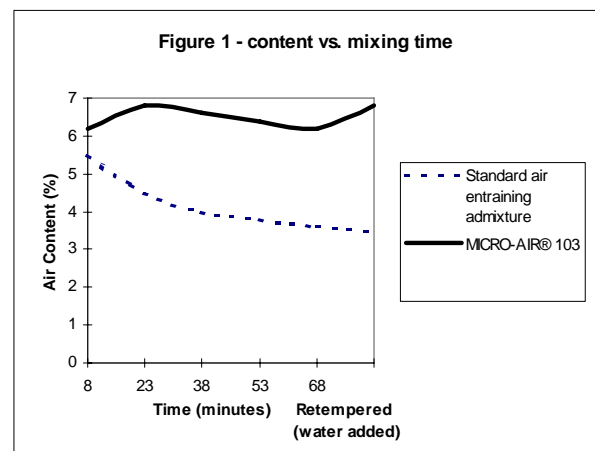
Improved ability to entrain and retain air in low-slump concrete; concrete containing high-carbon content fly ash; concrete containing large amounts of fine materials; concrete using high-alkali cements; high-temperature concrete; and concrete with extended mixing times.

Compatible for use - MICRO-AIR[®] 103 admixture is compatible with concrete containing other admixtures or admixture systems - water-reducers, high-range water-reducers, accelerators, retarders, densifiers and water repellents. It also increases the entrained air content of concrete made with air-entraining Portland cement.

The use of MICRO-AIR[®] 103 air-entraining admixture with BASF Construction Chemicals Pozzolith[®] admixtures forms a desirable combination for producing the highest quality, normal or lightweight concrete. Heavyweight concrete normally does not contain entrained air.

Note: When used in conjunction with other admixtures MICRO-AIR[®] 103 must be added to the concrete separately.

For optimum, consistent performance, the air-entraining admixture should be dispensed on damp, normal, or lightweight fine aggregate. When using lightweight fine aggregate, field evaluations should be conducted to determine the best location to dispense the air-entraining admixture - on the damp fine aggregate or with the initial batch water.



Note: The graph represents the average of all laboratory and field evaluation data accumulated to date. The majority of tests were conducted on concrete mixtures known for their difficulty to entrain and maintain the required air content.

These mixtures contained large amounts of the materials, high carbon content fly ash, high alkali cements, high concrete temperatures and low slumps.

Technical Data/Typical Properties

Appearance	Light Brown liquid
Specific gravity @ 20°C	1.005 g/cm ³
pH-value	10.5
Alkali content (%)	Less than or equal to 0.5
Chloride content (%)	Less than or equal to 0.10
Chlorine content (%)	Less than or equal to 0.10

Application Procedure

Concrete durability research has established that the best protection for concrete from the adverse effects of freeze/thaw cycles and de-icing salts results from: proper air content in the hardened concrete; a suitable air-void system in terms of bubble size and spacing; and adequate concrete strength; assuming the use of sound aggregates and proper mixing, placing, handling and curing techniques.

Control of air content should be based upon determinations made on concrete at the time of placement, following adjustment of the batch to proper consistency (slump). The rate of use of an air-entraining admixture depends on the air content to be obtained along with many other factors. The amount normally required is reduced by the introduction of water-reducing, set-controlling admixture.

When unusually low amounts of an air-entraining admixture are sufficient to achieve normal ranges of air content or if the required amount of air-entraining admixture necessary to achieve required levels of air content is observed to decrease significantly under given conditions, the reason for this change should be investigated. In such cases, it is especially important to determine: (a) that a proper amount of air is contained in the fresh concrete at the point of placement, and (b) that a suitable air-void system (spacing factor) is being obtained in the hardened concrete.

MICRO-AIR[®] 103 is a ready-to-use solution. Do not mix it with any other admixture.

Mixing

Add MICRO-AIR[®] 103 to the concrete mix using a dispenser designed for air-entraining admixtures; or add manually using a suitable measuring device that ensures accuracy within plus or minus 3% of the required amount.

There is no standard dosage rate for MICRO-AIR[®] 103 admixture. The exact quantity of air-entraining admixture needed for a given air content of concrete is not predictable because of differences in constituent materials. Typical factors which might influence the amount of air entrained are: water content, temperature, cement, sand grading, sand aggregate ratio, slump, means of conveying and placement, use of extra fine materials such as fly ash, etc. The amount of MICRO-AIR[®] 103 used upon the amount of entrained air required under actual job conditions.

In mixes containing water-reducing, set-controlling admixtures, the amount of MICRO-AIR[®] 103 needed is somewhat less than the amount required in plain concrete. In mixes requiring a significantly higher or lower dosage to obtain the desired air content, consult your BASF Construction Chemicals (UK) representative or Technical Services Department.

Measure the air content of the trial mix and either increase or decrease the quantity of MICRO-AIR[®] 103 admixture to obtain the desired air content in the production mix.

Check the air content of the first batch and make further adjustments if needed. Frequent checks during the course of the work should be made since factors mentioned in paragraph 3 above may require adjustments in the MICRO-AIR[®] 103-dosage rate.

Adjustments to the dosage should be based on the amount of entrained air in the mix at the point of placement.

Packaging

MICRO-AIR[®] 103 is supplied in 205 litre drums and bulk delivery as appropriate.

Storage

MICRO-AIR[®] 103 must be stored in a place where temperature does not drop below +5°C. If product has frozen, thaw at +3°C and agitate until completely reconstituted. Store under cover, out of direct sunlight and protect from extremes of temperature. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult BASF IBC Admixture Systems Technical Services Department.

Shelf Life

Minimum 12 months if stored in accordance to manufacturer's instructions in unopened containers.

Watchpoints

When used with certain BASF IBC Admixture Systems plasticizing and super plasticizing admixtures the recommended dosage may need to be increased. For further information contact BASF IBC Admixture Systems Technical Services Department.

MICRO-AIR[®] 103 is a CAUSTIC solution. In case of contact with skin, eyes or clothing, immediately flush the exposed area with water for at least 15 minutes. Remove contaminated clothing and shoes. Seek medical advice - especially if contact is with eyes. Wash clothing before re-use and discard shoes. Always keep the product out of reach of children. For further information see material safety datasheet.

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Health and Safety

*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

Spillage

Chemical products can cause damage; clean spillage immediately.

DISCLAIMER

"BASF IBC Admixture Systems Limited" (the Company) endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, the Company has no control over the selection of its products for particular applications. It is important that any prospective customer, user or specifier, satisfies him/her-self that the product is suitable for the specific application. In this process, due regard should be taken of the nature and composition of the background/base and the ambient conditions both at the time of laying/applying/installing the material and when the completed work is to be brought into use.

Accordingly, no liability will be accepted by the Company for the selection, by others, of a product, which is inappropriate to a particular application.

Products are sold subject to the Company's standard conditions of sale and all customers, users and specifiers, should ensure that they examine the Company's latest Product Literature.